

REMARKS

Claims 1-10 are pending. Claims 1, 2, 6, and 7 have been amended to affirmatively recite an “inorganic” soil-improving material. These amendments find support in, for example, the Specification, at page 5, line 27-page 6, line 4, and original claims 5, 9, and 10 of the present application, thus, there is no new matter. In claim 5, the incorrect dependence to claim “4” was changed to “1.” In claim 10, the incorrect dependence to claim “9” was changed to “6.” Claims 4 and 9 have been cancelled as redundant. Thus, claims 1-3, 5-8, and 10 are now pending for examination in this application.

Applicants believe that amending the claims to recite an “inorganic soil-improving material” that is water-absorbing and that exhibits “non-swelling and non-viscosity properties” serves to highlight the distinction between the invention and the references cited under 35 U.S.C. §103, Glaze, et al. (U.S. Patent No. 5,593,888) (“Glaze”) and Gardening Series Basics Choosing a Soil Amendment (“Gardening Series”). Specifically, regardless of whether perlite was or was not a known permeability improving material, the recited references do not teach or suggest the claimed invention. Indeed, far from suggesting the invention, the recited references affirmatively teach away from the claimed invention. *See* M.P.E.P. § 2145 at 2100-168. Further, the recited references contradict each other. And, as it is well established, “[i]t is improper to combine references where the references teach away from their combination.” M.P.E.P. § 2146 at 2100-169, relying on *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983).

Beginning with Glaze, unlike the inorganic material with water-absorbing, non-swelling and non-viscosity properties of the present application, Glaze is clearly focused on *organic* soil-improving materials that have nutritional value, as follows:

- “The chemical and/or biological amendments are preferably substantially *organic* in nature.” Glaze, at Col. 6, lines 20-21 (emphasis supplied).

- “The subject method employs chemical and/or biological amendments that are *organic* in nature, and are nutritionally balanced to provide all of the nutrients required to efficiently biodegrade whatever the material contaminant is present.” Glaze, at Col. 7, lines 20-24 (emphasis supplied).
- “If there are clay type soils, *wood particles* such as chips or sawdust are put down on liner before contaminated soil [is] introduced....” Glaze, at Col. 8, lines 6-8 (emphasis supplied).
- “Note that the use of inorganic nutrients can promote high salt content in soil due to the salt nature of inorganic nutrients. *Organic based* nutrients do not cause this to happen because they are not salt based.” Glaze, at Col. 9, lines 10-14 (emphasis supplied).
- “By utilizing *organic based* nutrients in H & H micro products, the bacteria degrading the petroleum hydrocarbons are actually providing the amino acids and other end products required for cell reproduction rather than requiring the bacteria to synthesize their own end products. If inorganic nutrients are utilized in a biological treatment of petroleum hydrocarbons, the bacteria must utilize a great deal of energy to synthesize the end products required for reproduction rather than the more efficient direct utilization of the H & H organic based nutrients.” Glaze, at Col. 13, lines 14-24 (emphasis supplied).

As can be seen from the citations above, Glaze takes pains to point out that organic soil-improving materials are more beneficial to soil than inorganic materials. Thus, the addition of *organic* soil-improving materials in Glaze is in marked contrast to the present application’s addition of *inorganic* soil-improving materials.

When Glaze does mention inorganic amendments, they are amendments, such as sand or gravel, that do not absorb water.

- “If the soil consists of clay, silt or any combination thereof, *sand* or wood fiber addition is highly recommended. Either of these substances will inhibit compaction of these ‘tight’ soils.” Glaze at Col. 12, lines 9-12 (emphasis supplied).
- “Regarding soil types, in heavy clay or silt add alder or firwood chips, or *pea gravel*. Alder or fir sawdust can also be used.” Glaze at Col. 11, lines 29-31 (emphasis supplied).

- "...clay or fine silt may require the addition of *sand* or wood fiber to assisting [sic] in breaking the soil platelets apart, so that oxygen is not excluded from the system." Glaze, at Col. 9, lines 45-48 (emphasis supplied).
- "After the liner has been laid down in a pile (on as smooth a surface as possible), a layer of *sand* is applied over the liner The *sand* or wood particle layer will permit complete mixing of all of the contaminated material and will overcome soil stratification." Glaze at Col. 8, lines 4-12 (emphasis supplied).

Thus, because the inorganic amendments that Glaze teaches do not absorb water, Glaze teaches away from the claims of the present application.

Gardening Series cannot be combined with Glaze because Gardening Series contradicts Glaze. *See* M.P.E.P. § 2146 at 2100-169. As noted above, Glaze teaches adding sand to clay soil to improve the soil. *See* Glaze at Col. 8, lines 4-11; *see also* Col. 12, lines 9-12. However, Gardening Series states that adding sand to clay soils is detrimental, and "creates a soil structure similar to concrete." Gardening Series at 1.

Indeed, Gardening Series also contradicts the claims in the present application. The present application teaches that vermiculite, which is inorganic, may be added to clay soils to improve permeability. *See, e.g.*, Claim 1 ("A method of purifying contaminated soil by microorganisms, comprising adding an inorganic soil-improving material to contaminated soil, the inorganic soil-improving material being water-absorbing, and having both non-swelling and non-viscosity properties after absorbing water in contaminated soil containing clay or silt"); *see also* Specification at page 5, line 27-page 6, line 4. However, Gardening Series teaches that vermiculite "is not a good choice for clay soils because of its high water retention." Gardening Series at 3.

Thus, Glaze and Gardening Series contradict each other in their teachings. *See* M.P.E.P. § 2146 at 2100-169. Further, both Glaze and Gardening Series teach away from the present application. *See* M.P.E.P. § 2145 at 2100-168. Therefore, there is no suggestion or motivation

to combine the references, and a *prima facie* case of obviousness cannot be supported. M.P.E.P. § 2143.01 at 2100-135. Because there is no suggestion or motivation to modify the references, and because the references teach away from the invention, the second and third prongs for *prima facie* obviousness need not be addressed.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully request reconsideration of the application and the timely allowance of the pending claims. If the Examiner does not find the claims allowable, the undersigned requests that, prior to taking action, the Examiner call her at (650) 849-6611 to set up an interview.

Please grant any further extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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